An examination of the role of emotional intelligence, social support and connectedness, in non-suicidal self-injury amongst young adults

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Abstract

Non-Suicidal Self-Injury (NSSI) is defined as the deliberate destruction of one's own body tissue, without suicidal intent and for purposes that are not socially sanctioned (International Society for the Study of Self-Injury, 2007). Previous research has documented emotion regulation difficulties among individuals engaging in NSSI; however, by examining emotional intelligence (EI), a more comprehensive assessment of emotion-related difficulties may be possible. EI is thought of as either one's ability or disposition to monitor the emotions of one's self, and of others, to discriminate among these emotions, and to use these emotions to guide thinking and behaviour (Mikolajczak, Petrides, & Hurry, 2009; Salovey & Mayer, 1990) and has been inversely related to self-harm in adolescents (Mikolajczak et al., 2009). Additionally, while individuals engaging in NSSI reported lower levels of perceived social support than individuals who never engaged in the behaviour (Muehlenkamp et al., 2013), it remains unclear which supportive source (i.e., family, friends, significant others) has greater implications in NSSI. In order to examine the role of interpersonal relationships in NSSI engagement, an investigation of the quality of the connections that form these relationships may be helpful. One's sense of connectedness to one's social environment has been associated with NSSI cessation (Rotolone & Martin, 2012), and preliminary findings suggest that this sense of connectedness may explain the relation between social support and various psychological outcomes (e.g., Williams & Galliher, 2006); however, few studies have examined social support and connectedness in the same model. Thus, the objectives of the present study were to 1) investigate differences in intrapersonal and interpersonal EI between university students with a history of NSSI and a comparison group; 2) examine differences in perceived social support from various supportive sources (i.e., family, friends and significant others), and social connectedness between the groups; and 3) investigate

the potential mediating role of social connectedness, in the relation between social support and

NSSI status. Participants were 56 female university students with a history of NSSI ($M_{age} =$

20.18 years, $SD = 2.07$), and a comparison group of 82 females with no history of NSSI.

Participants completed a battery of online questionnaires including a measure of EI, perceived

social support, social connectedness, and an NSSI screener question. Results from a one-way

MANOVA revealed that interpersonal EI did not differ between the groups, while intrapersonal

EI was significantly lower for the NSSI group than the comparison group. A second one-way

MANOVA revealed that perceived social support from family and friends was significantly

lower for the NSSI group than the comparison group, while perceived social support from

significant others did not differ between the groups. Results from a one-way ANOVA revealed

that scores on social connectedness were significantly lower for the NSSI group than the

comparison group. Lastly, results from separate mediation analyses revealed that social

connectedness fully mediated the relation between perceived social support from family, friends

and significant others, and NSSI status. The results suggest that university students may perceive

having social support, but specifically feeling more connected to their social environment is

associated with a lower likelihood of NSSI engagement. NSSI treatment interventions focusing

on strengthening the connections that form interpersonal relationships, or forming new

connections with others, may be associated with healthier adjustment.

   Keywords: non-suicidal self-injury, young adults, emotional intelligence, social support, social

connectedness

Résumé

L'automutilation non-suicidaire (ANS) est définie par la destruction délibérée et intentionelle de ses propres tissues organiques sans intention de suicide et pour des raisons non socialement acceptables (International Society for the Study of Self-Injury, 2007). Des recherches précédentes documentent que les individus qui utilisent l'ANS ont des difficultés à stabiliser leurs émotions. Par contre, en examinant l'intelligence émotionelle (IE), une évaluation plus compréhensive des difficultés reliées aux émotions devient possible. L'IE est définie par l'habileté ou la disposition de quelqu'un d'observer ses propres émotions ainsi que les émotions des autres, de distinguer ces émotions et d'interpréter ces émotions afin de guider ses pensées et son comportement (Mikolajczak, Petrides, & Hurry, 2009; Salovey & Mayer, 1990). L'IE est négativement liée à l'automutilation (Mikolajczak et al., 2009). De plus, même si les individus qui utilisent l'ANS rapportent des niveaux moins élevés de soutien social perçu comparés à ceux qui ne se sont jamais automutilés (Muehlenkamp et al., 2013), il reste à savoir quelle source de support (famille, amis, conjoint) a le plus d'implications avec l'ANS. Afin d'examiner le rôle des relations interpersonelles dans l'ANS, une investigation de la qualité des connexions qui forment ces relations peut être utile. Le niveau de connexion à son environnement social est associé avec la cessation d'ANS (Rotolone & Martin, 2012) et de nouvelles études suggèrent que ce sens de connexion pourrait expliquer la relation entre the soutien social et plusieurs états psychologiques (e.g., Williams & Galliher, 2006). Par contre, très peu d'études ont examiné le soutien social et le niveau de connexion à son environnement social dans le même modèle. Afin d'adresser ces lacunes dans la littérature, les objectifs de l'étude présente étaient de 1) investiguer les différences D'IE intrapersonnelle et interpersonnelle entre des étudiants à l'université avec des antécédents d'ANS et sans ces antécédents ; 2) examiner les différences de soutien social perçu

d'une variété des sources (famille, amis, conjoint) et le niveau de connexion à son environnement social entre les deux groupes ; et 3) investiguer le rôle de médiation potentiel de la connexion à son environnement social dans la relation entre le soutien social et le statut d'ANS. Le groupe de participantes était formées de 56 étudiants à l'université avec un antécédent d'ANS ($M_{âge}$ = 20.18 années, *É.-T.* = 2.07) et un groupe de 82 étudiantes sans antécédent d'ANS. Les participantes ont complété plusieurs questionnaires en ligne incluent une mesure d'IE, de soutien social perçu, de connexion à son environnement social ainsi qu'une mesure d'ANS. Les résultats d'une analyse multivariée de variance (MANOVA) ont révélé que l'IE interpersonnelle ne différait pas entre les deux groups d'ANS tandis que l'IE intrapersonnelle était significativement plus basse dans le groupe d'ANS que le groupe sans. Une deuxième analyse multivariée de variance (MANOVA) a démontré que le soutien social perçu de la famille et des amis était aussi significativement plus bas dans le groupe d'ANS que le groupe sans ANS. Par contre, le soutien social perçu provenant d'un conjoint ne différait pas entre les deux groupes.

Mot clés: automutilation non-suicidaire, jeune adultes, intelligence émotionelle, support social, connexité sociale

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CHAPTER 1

Introduction

Non-Suicidal Self-Injury (NSSI) has been defined as the deliberate destruction of one's own body tissue, without a conscious suicidal intent and for purposes that are not socially sanctioned (International Society for the Study of Self-Injury, 2007). NSSI is not uncommon amongst university students; approximately 15-20% report engaging in this behaviour at least once in their life (Swannell, Martin, Page, Hasking, & St John, 2014). An integrated theoretical model explains engagement in NSSI as an unhealthy response to stressful life events and serving intrapersonal (i.e., emotion regulation) and interpersonal (i.e., social) functions (Nock, 2009). It appears as though engagement in NSSI may stem from both difficulties in understanding and regulating one's emotions, as well as communicating and connecting with other individuals effectively. However, unlike the intrapersonal functions of NSSI, the social functions of this behaviour have received far less attention in the literature (Muehlenkamp, Brausch, Quigley, & Whitlock, 2013; Nock, 2008). More research examining these interpersonal motivations of NSSI would be helpful in order to better understand this behaviour.

Emotional Intelligence (EI) has been thought of as either one's ability or disposition to monitor the emotions of one's self, and of others, to discriminate among these emotions, and to use these emotions to guide thinking and behaviour (Mikolajczak, Petrides, & Hurry, 2009; Salovey & Mayer, 1990). EI has been associated with positive coping among undergraduate students (Saklofske, Austin, Mastoras, Beaton, & Osborne, 2012) and negatively associated with student stress (Austin, Saklofske, & Mastoras, 2010). Additionally, preliminary findings have demonstrated that higher EI was associated with a lower likelihood of self-harm among adolescents (Mikolajczak et al., 2009). This study did not examine the differences between

intrapersonal and interpersonal emotional competencies separately, which have been theorized to be of different importance in varying contexts (Brasseur, Gregoire, Bourdu, & Mikolajczak, 2013). Therefore, examining these separately in young adults may further our understanding of NSSI engagement amongst university students. In addition, investigating the interpersonal role of NSSI may significantly add to our understanding of the relation between social support and connectedness, and NSSI engagement.

NSSI engagement has been associated with lower perceived social support (Muehlenkamp et al., 2013); however, it is unclear whether a particular supportive source (i.e., family, friends, significant others) has greater implications in NSSI engagement, as previous studies have demonstrated varying results. For example, Trepal, Wester, and Merchant (2015) found that social support from significant others was lower among individuals currently engaging in NSSI compared to individuals with a past history of NSSI. Although, lower social support from family was reported by individuals currently engaging in self-injury, compared to those with a past history of self-injury (Rotolone & Martin, 2012). Additionally, social support from peers was found to be lower for individuals with a history of NSSI than a comparison group of individuals with no history of NSSI, while social support from family members was no different between the groups (Heath, Ross, Toste, Charlebois, & Nedecheva, 2009). These findings suggest that cultivating different types of supportive interpersonal relationships may be associated with a lower likelihood of NSSI engagement (Trepal, Wester, & Merchant, 2015). However, the development of an enduring sense of connectedness to the larger social environment is theorized to be an important component for individuals' positive perception of their interpersonal relationships (Lee, Draper, lee, 2001). Therefore, extending research beyond examining the perceived presence of social support to also understand the underlying level of

connectedness may lead to a more thorough understanding of the role of interpersonal

relationships in NSSI. Social connectedness has been defined as one's beliefs and attitudes about

the strength of relationships with different members of one's social environment, such as with

family, friends, peers, strangers and society (Lee, Draper, & Lee, 2001). Previous findings have

demonstrated that individuals with a history of self-injury reported lower levels of social

connectedness than those with no history of this behaviour (Rotolone & Martin, 2012). However,

this study did not examine NSSI behaviours solely, but rather used a broader definition of self-

injury which included suicidal behaviours. To understand how these constructs may be

associated with engagement in NSSI, it would helpful to use its specific definitional criteria.

Evidence suggests that NSSI is different from suicidality in terms of prevalence, correlates,

course, and response to treatment (Nock, 2009).

Overall these results provide preliminary evidence suggesting an association between

NSSI and problematic social support and connectedness; however, these social constructs have

not been examined together. Doing so, would allow for the opportunity to understand whether

social connectedness is associated with NSSI and whether this association significantly adds to

our understanding of the role of perceived social support in NSSI.

In order to address these gaps in the literature, the main objectives of the present research

study were to 1) investigate group differences in intrapersonal and interpersonal EI between

university students with a history of NSSI and a comparison group; 2) examine group differences

in perceived social support from various supportive sources (i.e., family, friends and significant

others), and social connectedness between individuals with a history of NSSI and a comparison

group; and 3) investigate the potential mediating role of social connectedness, in the relationship

between social support and NSSI status. This research study is the first to examine the role of

interpersonal and intrapersonal EI separately among university students who engage in NSSI

relative to their non-self-injuring peers, and to examine the role of social connectedness in the

relationship between perceived social support and NSSI. This program contributes to the

literature surrounding NSSI by increasing our understanding of the relationship of specific

interpersonal risk factors and engagement in NSSI, and the role of social connectedness in these

associations.

CHAPTER 2

Review of literature

The following literature review will provide an overview of non-suicidal self-injury (NSSI). This review will provide information on the age of onset, prevalence rates and gender differences of NSSI. Additionally, common theoretical models explaining the risk and functions of NSSI will be presented.

The literature review will then give an overview of both intrapersonal and interpersonal factors associated with engagement in NSSI that are pertinent to the present study's research objectives. First, previous research on a comprehensive model of interpersonal and intrapersonal emotional functioning will be presented. Second, the literature review will then focus on previous research examining the interpersonal factors associated with NSSI. Specifically, previous research in the area of social support and social connectedness will be presented.

Non-Suicidal Self-Injury

Non-suicidal self-injury (NSSI) has been defined as the deliberate destruction of one's own body tissue, without a conscious suicidal intent and for purposes that are not socially sanctioned; therefore excluding tattooing and piercing (International Society for the Study of Self-Injury, 2007). Young adults most commonly report cutting or carving, burning, biting, scraping, picking and scratching of the skin, and self-hitting (Hasking, Momeni, Swannell, & Chia, 2008; Nock, 2010) as methods of NSSI engagement. While NSSI engagement was examined in the present study, some previous research presented in this literature review use the term "deliberate self-harm" (DSH; Pattison & Kahan, 1983) to describe a comparable pattern of behaviour. While DSH is defined similarly to NSSI, it often includes a larger range of behaviours (i.e., substance abuse) that are not considered in NSSI (Nock, 2010). That is,

behaviours within the definition of DSH do not necessarily lead to the immediate damage of body tissue, which is a component of NSSI. Additionally, the term "self-injury" is also defined similarly to NSSI and will also be presented in the following literature review, when the behaviour examined in previous research included self-injury with and without suicidal intent in its definition (Nock, 2008).

In previous years, NSSI engagement was assumed to only be associated with psychiatric disorders due to its high prevalence among psychiatric patients (Klonsky, 2007); however, the prevalence of this behaviour in community samples has made NSSI increasingly examined amongst university students. In recent years NSSI has been included in Section III of the current edition of the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; *DSM-5;* American Psychiatric Association, 2013), as a diagnostic classification warranting further investigation.

Previous research has found that NSSI and suicide attempt may co-occur; although, they have also been documented to occur in isolation (Muehlenkamp, Claes, Havertape, & Plener, 2012). Therefore, NSSI and suicidality are believed to lie on a continuum, whereby they are separate but related constructs (Butler & Malone, 2013; Nock 2008). While NSSI does not infer suicidal intent, NSSI behaviours have been found to be predictive of future suicide attempts (Wilkinson, Kelvin, Roberts, Dubicka, & Goodyer, 2011). Specifically, Willoughby, Heffer, and Hamza (2015) found that a higher frequency of NSSI engagement was predictive of a higher acquired capability for suicide over time. Although NSSI by definition excludes suicidal intent and thus is a different construct, there is ample evidence suggesting that it serves as a significant risk factor for, and correlate of, suicidal behaviours and therefore merits serious consideration (Swannell et al., 2014).

Age of Onset, Prevalence Rates and Gender Differences

Studies examining the age of onset of NSSI generally find a consistent pattern with two peak points for onset. In particular, researchers have documented an early adolescence (12-14 years of age) onset (Andrews, Martin, Hasking, & Page, 2013, 2014). The second most commonly noted point of onset is late adolescence (17- 18 years of age; Klonsky & Muehlenkamp, 2007). It has been suggested that the timing for these peaks of NSSI onset are associated with transition periods marked by heightened stress (Taliaferro & Muehlenkamp, 2015). Stress associated with transition periods, such as the transition to university during young adulthood, make university students at an increased risk for engagement in NSSI and other mental health difficulties (e.g., Zivin, Eisenberg, Gollust, & Golberstein, 2009).

With the increase in research examining NSSI in community samples, studies have found that approximately 4-6% of adults in the general population report engaging in NSSI at least once in their lifetime (Klonsky, Oltmanns, & Turkheimer, 2003; Klonsky, 2011). This rate has been found to be even higher among adolescents and young adults, with 14-18% reporting engaging in this behaviour at some point in their lives (Muehlenkamp et al., 2012; Whitlock, Eckenrode, & Silverman, 2006). Similarly, research investigating NSSI amongst university students, has documented a 15-20% prevalence rate (Swannell et al., 2014; Whitlock et al., 2011). These findings indicate that NSSI is a prevalent behaviour among adolescents and young adults who do not necessarily have psychiatric disorders.

The gender differences reported in studies examining NSSI engagement among community samples have been inconsistent. Engagement in this behaviour was previously thought of as a predominantly female behaviour (De Riggi, Moumne, Heath, & Lewis, 2017). Among adolescents, studies have found a higher incident rate among females, compared to males (Bresin & Schoenleber, 2015; Sornberger, Heath, Toste, & McLouth, 2012); however, these

gender differences were found to diminish during young adulthood (De Riggi et al., 2017), with

comparable rates between females and males (Heath, Toste, Nedecheva, & Charlebois, 2008).

Therefore, gender differences appear to remain unclear due in part to the lack of males in NSSI

research (Cipriano, Cella, & Cotrufo, 2017). Consequently, it is poorly understood whether NSSI

engagement may be more common among females compared to males, or perhaps that males are

less willingly to disclose NSSI and participate in research investigating this behaviour. Studies

that have examined the gender differences of NSSI have reported that males and females tended

to differ in terms of their endorsed methods of NSSI engagement. For example, females more

often reported engaging in cutting and scratching behaviours, while males tended to report self-

hitting behaviours (Andover, Primack, Gibb, & Pepper, 2010; Sornberger et al., 2012; Whitlock

et al., 2011).

Risk and Functions of NSSI

      In order to understand the risk factors or circumstances which may lead individuals to

engage in NSSI as an unhealthy coping behaviour, Nock (2009) proposed an integrated

theoretical model. This framework explains engagement in NSSI as both a means of emotion

regulation and interpersonal communication (Nock, 2009). Nock's model suggests that distal risk

factors (e.g., childhood maltreatment, familial conflict, genetic predispositions) may lead to

interpersonal and intrapersonal vulnerabilities that predispose individuals to respond in an

unhealthy manner to stressful life events (Nock, 2009). This unhealthy response to stressful life

events, coupled with NSSI-specific risk factors is believed to explain why some individuals may

be at risk for engagement in NSSI (Nock, 2009). This model lends to an explanation of NSSI

onset, but may not necessarily explain the maintenance of this behaviour, whereby other models

have been used to do so.

In the last decade there has been a shift in research surrounding NSSI, to further understand the functions (i.e., motivations) of this behaviour (Klonsky, 2007; Nock, 2009), that are believed to contribute to the maintenance of NSSI engagement. These motivations of NSSI have been thought of as either serving interpersonal or intrapersonal functions (Klonsky & Glenn, 2009; Klonsky, Glenn, Styer, Olino, & Washburn, 2015). A Four Function Model proposed by Nock (2010) has been used to explain the maintenance of NSSI. This model suggests that maintenance of the behaviour may be possible via any of the four reinforcement processes. These four processes differ in terms of whether the reinforcement of the behaviour is positive or negative and whether the behaviour was proceeded consequentially by intrapersonal or interpersonal events (Nock, 2010). Accordingly, NSSI may be maintained due to negative intrapersonal reinforcement, in which NSSI results in a decrease or halt of aversive feelings or thoughts (Nock, 2010). Positive intrapersonal reinforcement may also maintain NSSI by increasing wanted feelings and thoughts (Nock, 2010). Alternatively, negative interpersonal reinforcement may maintain NSSI by a decrease or cessation of an undesired social event (Nock, 2010). Positive interpersonal reinforcement may maintain NSSI by increasing the incidence of desired social events (Nock, 2010). These various processes have led to different lines of research within the broader NSSI research context.

Previous research that has examined the intrapersonal functions of NSSI has described these as self-focused factors that reinforce NSSI behaviours (Klonsky & Glenn, 2009). The most commonly endorsed intrapersonal function of NSSI has been reported as emotion regulation (Klonsky & Glenn, 2009; Nock, Prinstein, & Sterba, 2009). According to emotion regulation models, NSSI functions to reduce negative emotions and dampen overwhelming emotions (Klonsky, 2007). Interpersonal functions (e.g., peer bonding, interpersonal influence) have also

been theorized to explain NSSI engagement and are indicative of the social factors that reinforce NSSI behaviours (Klonsky & Glenn, 2009). Unlike emotion regulation, which has been found by researchers far more commonly as a motivation for NSSI engagement (Klonsky, 2007), the social functions of this behaviour have received far less attention in the literature (Muehlenkamp et al., 2013; Nock, 2008). Based on the aforementioned processes it appears as though the intrapersonal functions of NSSI are more prevalent, but that there is an interpersonal role of NSSI which is not fully understood. This suggests that NSSI may stem from both difficulties in understanding and regulating one's emotions, as well as communicating and connecting with other individuals effectively. Therefore, research examining these underlying intrapersonal and interpersonal mechanisms is paramount to understanding engagement in NSSI.

Emotional intelligence

Emotional Intelligence has been thought of as either one's ability or disposition to monitor the emotions of one's self, and of others', to discriminate among these emotions, and to use these emotions to guide thinking and behaviour (Mikolajczak et al., 2009; Salovey & Mayer, 1990). Different models have emerged to conceptualize EI, and thus have led to different lines of research within this context. These various conceptualizations have also led to the development of different instruments to measure EI empirically, according to the respective model. Two conflicting conceptualizations of EI are the ability-based model (Salovey & Mayer, 1990) and the trait-based (i.e., disposition-based) model of EI (Petrides & Furnham, 2001).

In the ability-based model EI is thought of as an intelligence (Mayer, Salovey, & Caruso, 1997, 2004; Salovey & Mayer, 1990). Mayer, Salovey, and Caruso (2004), conceptualized the ability-based model as encompassing four "branches". This included the ability to perceive emotion, use emotions to guide thinking, understand emotions, and manage emotions (Mayer et

al., 2004). Furthermore, the use of these skills involves the ability to be aware of what the

appropriate behaviour is in a particular context (Salovey & Grewal, 2005). The first branch,

perception of emotions, is thought of as the most basic aspect of EI and includes the ability to

identify one's own emotions, as well as to detect and discriminate others' emotions through

facial expressions, pictures, and voices (Salovey & Grewal, 2005). The second branch includes

the ability to use emotions to facilitate cognitive activities (i.e., thinking, problem solving).

Understanding emotions includes the ability to discriminate between variations in emotions, and

to recognize and describe how emotions change over time (Salovey & Grewal, 2005). The final

branch, managing emotions, encompasses the ability to regulate the emotions of one's self and of

others (Salovey & Grewal, 2005). An emotionally intelligent individual is said to have the ability

to harness emotions in order to achieve particular goals (Salovey & Grewal, 2005). Accordingly,

in line with this view, EI has been measured using IQ-like performance tests (Mikolajczak,

2009).

Unlike the ability-based model of EI, which was first theorized then tested empirically,

the trait-based model was empirically tested, and then theorized (Mikolajczak, 2009). This model

views EI as "emotional self-efficacy" and is thought of as a set of emotion-related dispositions

that can be measured through self-report (Petrides & Furnham, 2003). According to Petrides and

Furnham (2003), the difference between the ability and trait-based models of EI are in the

measurement approach employed, and not in the various theoretical conceptions of EI.

In an effort to reconcile the debate between the ability and trait-based perspectives of EI,

Mikolajczak (2009) has proposed a unifying model of EI that encompasses individual differences

in knowledge, abilities and dispositions related to emotions, in order to draw upon the merits of

both EI models. The first level, of this Three-Level Hierarchical model of EI, is *knowledge,*

referring to the knowledge that an individual has about emotions and how to handle emotionally charged situations (Mikolajczak, 2009). The second level of the model refers to *abilities* related to emotional functioning, that is, individuals' abilities to use specific strategies in emotionally charged situations (Mikolajczak, 2009). Lastly, the third level of the model refers to *dispositions* related to emotions, or individuals' predilection to behave in a particular manner in emotionally charged situations (Mikolajczak, 2009). By using this model, researchers and practitioners may avoid having to choose one instrument or perspective to explain and measure behaviour (Mikolajczak, 2009). Alternatively, it may also allow them to target one of the dimensions of EI, depending on the specific context (Mikolajczak, 2009).

This unifying model of EI has been used as a guiding framework for EI interventions. Researchers set out to empirically examine whether EI could be improved in individuals. Nelis, Quoidbach, Mikolajczak, and Hansenne (2009) administered a 4-week EI intervention to young adults, which involved training in the various components of EI. Results from this study demonstrated that young adults' scores on measures targeting the various competencies of EI after undergoing the intervention increased significantly more than the control group (Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009). Importantly, these changes had lasting effects 6 months following the intervention, suggesting an implementation of the skills learned in daily life (Nelis et al., 2009).

Building on the work of Nelis and colleagues (2009), Pool and Qualter (2012) administered an 11-week intervention to undergraduate students targeting the 4 main components of EI based on Mayer and Salovey's (1997) Four Branch ability model of EI. Both ability and emotional self-efficacy (i.e., trait) based measures were used to evaluate changes in EI following the intervention (Pool & Qualter, 2012). Positive changes in both EI and emotional

self-efficacy were found for the intervention group (Pool & Qualter, 2012). These results suggest

that it is possible to improve EI abilities and self-efficacy pertaining to emotional functioning.

Furthermore, these findings suggesting that the components of EI may be taught and learned

have led researchers in this domain to favour the term "emotional competency" instead of EI

(e.g., Brasseur et al., 2013).

Emotional intelligence measured as both a trait and ability, has been linked to outcomes

associated with university student's well-being and academic performance, emphasizing the

importance of examining EI among university students. For example, Saklofske, Austin,

Mastoras, Beaton, and Osborne (2012) found that EI was associated with positive coping among

undergraduate students, and that EI was negatively associated with student stress (Austin et al.,

2010). Additionally, EI has demonstrated a positive association with mindfulness, life

satisfaction, and indices of subjective well-being (Schutte & Malouff, 2011). Implications of EI

have also been demonstrated during adolescence, whereby a systematic review found that higher

EI had an inverse relationship with psychological maladjustment among adolescents

(Resurreccion, Salguero, & Aranda, 2014). These findings demonstrate that EI may have

significant implications across various developmental stages.

Previous research has demonstrated EI interventions to be effective at increasing

emotional functioning. One of the main components of these EI interventions is emotion

regulation, which has also been documented as a common function of NSSI engagement.

Therefore, components of EI interventions, such as those pertaining to emotion regulation may

have significant implications for NSSI interventions. However, further research is needed to

understand the relation between EI and NSSI.

Emotional Intelligence and NSSI

As emotion regulation research has been central to our understanding of the intrapersonal role of NSSI engagement, EI has the potential to more comprehensively measure components of emotional functioning that may be associated with NSSI. Preliminary findings have demonstrated that higher EI was associated with a lower likelihood of DSH reported by adolescents (Mikolajczak et al., 2009). This study did not solely measure NSSI, as it used a broader definition of self-injury, which included methods of engagement such as taking pills, which does not meet the criteria of NSSI. Furthermore, this study did not examine the differences between interpersonal and intrapersonal factors of EI, which have been theorized to be of different importance in varying contexts (Brasseur et al., 2013). Despite this, these results point to EI having the potential to deepen our understanding of NSSI; therefore, examining the interpersonal and intrapersonal emotional competencies of EI separately among university students may further our understanding of this behaviour. Additionally, as the interpersonal role of NSSI is less understood, investigating the social factors associated with engagement in NSSI may significantly add to our understanding of the relation between social support and connectedness and NSSI engagement.

Perceived Social Support and Connectedness

Perceived social support

Measures of perceived social support assess an individual's perception of social support received from different sources (e.g., family, friends, significant others). The literature is quite vast on cross-sectional research in the area of social support in samples of university students (for a review see Richardson, Abraham, & Bond, 2012). Previous research has consistently concluded that social support is associated with positive physical and mental health outcomes (e.g., Berkman et al., 2003; Dahlem, Zimet, & Walker, 1991) and that it may be important for

university students' well-being and healthy adjustment. Specifically, in a sample of university students, Hefner and Eisenberg (2009) found that lower levels of social support were associated with an increased risk of experiencing mental health difficulties. A second study found that lower levels of perceived social support were associated with lower levels of resilience, which in turn was associated with higher psychological distress amongst university students (Pidgeon, Rowe, Stapleton, Magyar, & Lo, 2014). These studies have demonstrated a relation between social support and university students' well-being. In addition, perceived social support has also been associated with NSSI engagement (Muehlenkamp et al., 2013); however, more research is needed to clarify the relation between the various supportive sources and NSSI engagement, which may add to our understanding of the interpersonal role of NSSI.

Perceived social support and NSSI

Previous research has demonstrated a clear association with perceived social support and NSSI engagement. In particular, Rotolone and Martin (2012) found that family and peer social support were lower for individuals who reported a history of NSSI, compared to those with no history of the behaviour. Furthermore, lower family social support was reported by individuals currently engaging in self-injury, compared to those with a past history of self-injury (Rotolone & Martin, 2012). This suggests that low family and peer social support may be associated with self-injury onset, while only family social support may be associated with self-injury cessation. These findings do not present without limitations; one in particular is that the self-injury groups examined in the study may have included individuals who reported engaging in self-injury with suicidal intent, as they were not removed from the group comparisons. This may limit the implications of the findings to understanding NSSI specifically, as there is evidence suggesting

that NSSI is different from suicidality in terms of prevalence, correlates, course, and response to treatment (Nock, 2009).

By examining NSSI behaviours specifically, a longitudinal study by Tatnell, Kelada, Hasking, and Martin (2014) found that among adolescents, social support from family was a protective factor for NSSI engagement. In particular, high family support was predictive of NSSI cessation, while a lack of family support, predicted NSSI onset (Tatnell, Kelada, Hasking, & Martin, 2014). A similar pattern of results emerged among a university sample, whereby Trepal and colleagues (2015) examined reports of perceived social support from family, friends and significant others between individuals who reported currently engaging in NSSI, those with a past history of NSSI (i.e., reported not currently engaging in NSSI), and individuals with no history of NSSI. Results suggested that individuals who identified as currently engaging in NSSI perceived their social support from family and friends no differently than individuals with a past history of NSSI, but perceived their social support from significant others to be significantly lower (Trepal et al., 2015). Additionally, individuals who reported currently engaging in NSSI reported perceiving their social support from family, friends and significant others lower than those who never engaged in the behaviour (Trepal et al., 2015). Interestingly, perceived family support was lower for individuals who reported a past history of NSSI compared to those who never engaged in the behaviour, but these groups did not differ in their reported perceived social support from friends and significant others (Trepal et al., 2015).

Differences in the pattern of results for social support from family may be noted, whereby Trepal and colleagues (2015) found that regardless of whether individuals reported currently engaging in NSSI or having a past history of engagement, they differed in their perceived family social support significantly from those with no history of NSSI. Conversely,

Heath, Ross, Toste, Charlebois, and Nedecheva (2009) documented that young adults with a history of NSSI reported their social support from family no different than those who never engaged in the behaviour. While Heath and colleagues (2009) found that social support from friends was reported lower by individuals with a history of NSSI than those with no history, Trepal and colleagues (2015) found this to be the case only between those who reported currently engaging in NSSI compared to those who never engaged in the behaviour and that individuals with a past history of NSSI engagement did not differ from those with no history of NSSI. In summary, similarities between these two studies in terms of the results for social support from friends were found, however they differed in terms of their results for family social support. Additionally, Heath and colleagues (2009) did not examine social support from significant others which highlights the need to examine these three sources of social support to further clarify their relation with NSSI engagement.

Overall, previous research has demonstrated that regardless of whether individuals report currently engaging in NSSI or having a past history of engagement, these groups tend to differ in the amount of support they perceive from their social networks, compared to individuals who do not have a history of this behaviour. Therefore, social support may be associated with NSSI and cultivating different types of supportive interpersonal relationships may be an important protective factor for individuals who report engaging in NSSI (Trepal et al., 2015). However, the implications of the various supportive sources for NSSI engagement remains unclear. Additionally, a further investigation of the role of interpersonal relationships in NSSI engagement also requires a closer examination of the quality of the connections that form these relationships, which may aid in explaining the social functions of NSSI.

Social connectedness

Unlike social support, social connectedness is a construct that has been examined less extensively; however, preliminary findings suggest that it may play an important role in interpersonal relationships and is worth investigating in relation to NSSI. Social connectedness is defined as one's beliefs and attitudes about the strength of relationships with different members of one's social environment, such as with family, friends, peers, strangers and society (Lee et al., 2001). Social connectedness is hypothesized to be one's stable sense of connectedness with the social world, as a result of the cumulative impact of past and present relationships (Williams & Galliher, 2006). Unlike social support, where lower scores are indicative of a lack of support for specific sources, low social connectedness is believed to represent a persistent inability to connect with one's social environment (Lee & Robbins, 1995). Accordingly, individuals who score higher on social connectedness are believed to engage more easily in relationships, are more socially active, and perceive others more positively (Lee et al., 2001). In contrast, individuals who score lower on social connectedness are expected to experience relationship dissatisfaction and engage in maladaptive interpersonal behaviours (Williams & Galliher, 2006).

Self-reported social connectedness has been found to be negatively associated with symptoms of psychological distress (Williams & Galliher, 2006), loneliness and depression (Jose & Lim, 2014), and positively associated with well-being (Mauss, Shallcross, Troy, John, Ferrer, Wilhelm, & Gross, 2011). Additionally, university students who scored high on social connectedness were found to also report higher self-esteem, lower levels of anxiety and depression, and lower levels of perceived stress (Armstrong & Oomen-Early, 2009). These preliminary results suggest that social connectedness may play a role in university students' healthy adjustment and well-being.

In Lee, Draper, and Lee's (2001) study, a more in-depth examination of this construct revealed that low social connectedness in itself did not lead to psychological distress, but rather, it was the dysfunctional interpersonal behaviours associated with a low sense of social connectedness that led to psychological distress. These results demonstrate that in order to better understand how social connectedness may lead to healthy adjustment and well-being, a more thorough investigation of the mechanisms through which this construct functions is required, as opposed to simply examining its correlates. A recent examination of high school students' subjective well-being revealed that social connectedness mediated the relation between self-reported psychological maltreatment and subjective well-being (Arslan, 2018). Specifically, the negative effects of psychological maltreatment on well-being occurred through the medium of psychological maltreatment's effect on social connectedness (Arslan, 2018). A mediation effect of social connectedness was also demonstrated among university students, in which social connectedness mediated the relation between loneliness and adjustment difficulties (Duru, 2008). That is, the effect of loneliness on adjustment occurred through the medium of loneliness' effect on social connectedness (Duru, 2008). These results demonstrate that social connectedness has a positive association with university students' healthy adjustment, and potentially mental health; therefore, this construct warrants further investigation.

Few studies have examined the relation between social support and social connectedness. One in particular by Williams and Galliher (2006) found that reported levels of social connectedness amongst university students mediated the association between social support and psychological health. These results suggest that social connectedness may in-part explain the relation between social support and various psychological outcomes associated with healthy

adjustment and well-being; however, few studies have tested social support and connectedness in the same model.

Overall, the results surrounding social connectedness among university students point to this construct as an important factor to consider for university students, and that it may be worth examining the relation between social connectedness and NSSI engagement. The literature is however very scant on studies that have examined the association or relation between social connectedness and NSSI engagement.

Social Connectedness and NSSI

One study that conducted a longitudinal analysis of the link between NSSI and suicide revealed that young adults with a history of NSSI who reported lower social connectedness were at a greater risk of experiencing concurrent and future suicidal thoughts and behaviours (Whitlock et al., 2013). These results suggest that having a low sense of social connectedness may be a potential psychosocial indicator of suicidality among individuals with a history of NSSI engagement (Whitlock et al., 2013). Rotolone and Martin's (2012) study was one of the few to examine social connectedness, in addition to social support in a sample of university students who reported current and past histories of self-injury. In terms of social connectedness, results demonstrated that individuals with a history of self-injury engagement reported lower levels of social connectedness than those with no history of this behaviour (Rotolone & Martin, 2012). Additionally, for individuals with a history of self-injury, those who identified as currently engaging in the behaviour had lower social connectedness compared to those with a past history of self-injury (Rotolone & Martin, 2012). These results suggest that social connectedness may be associated with NSSI onset and cessation. Furthermore, similar to Whitlock and colleagues' (2013) findings, individuals who reported a history of NSSI engagement also reported higher

levels of social connectedness than did individuals who had self-injured with suicidal intent (Rotolone & Martin, 2012). These preliminary results shed light on the relation between social connectedness and NSSI engagement and cessation; however, more research is needed to understand these associations.

In summary, NSSI has been observed to be a prevalent unhealthy coping behaviour amongst university students, and has been described as a means of emotion regulation. Engagement in NSSI may put individuals at an increased risk of suicide attempt; therefore, a deeper understanding of this behaviour is warranted. Engagement in NSSI behaviours are said to be motivated and maintained for intrapersonal and interpersonal reasons. Intrapersonal motivations for NSSI engagement have been more investigated in NSSI research; consequently, the social functions of NSSI are less understood. EI encompasses one's emotional competencies for both one's emotions (i.e., intrapersonal) and the emotions of others' (i.e., interpersonal) and has been associated with DSH in adolescence. Intrapersonal and interpersonal EI have not been examined separately among university students who report a history of NSSI engagement. Doing so may further our understanding of the specific emotion-related competencies that may be associated with NSSI engagement. Additionally, by further investigating the interpersonal role of NSSI engagement, understanding individuals' perceived quality of their interpersonal relationships may be possible. Decreased social support has been associated with NSSI engagement; however, it is unclear which supportive source is most important. An understanding of the role of these supportive interpersonal relationships in NSSI engagement also requires a closer examination of the quality of the connections that form these relationships, which may shed light on the social functions of NSSI.

Research Objectives

In order to address the gaps in the literature, the present study sought to first investigate the differences in intrapersonal and interpersonal EI between individuals with a history of NSSI and a comparison group with no history of NSSI. It was hypothesized **(H1)** that individuals with a lifetime history of NSSI would report lower levels of both intrapersonal and interpersonal EI, than individuals with no history of NSSI.

The second research objective was to examine the possible differences of perceived social support from various sources (i.e., family, friends, significant others), and social connectedness, between individuals with a history of NSSI and a comparison group. It was hypothesized **(H2)** that individuals with a lifetime history of NSSI would report lower levels of perceived social support from family **(H2a)**, friends **(H2b)**, and significant others **(H2c),** and social connectedness **(H3)** than individuals without a history of NSSI.

Lastly, the third research objective was to evaluate whether social connectedness may be a mediator in the relation between perceived social support from the various sources and NSSI. It was hypothesized that social connectedness would mediate the relation between the perception of social support from family **(H4a)**, friends **(H4b)**, and significant others **(H4c)**, and NSSI status.

CHAPTER 3

Method

Participants

Participants ($n = 175$, 86.9% female, $M_{age} = 20.20$, $SD = 1.96$) were a sample of

undergraduate students recruited from a large urban English-language university in Quebec,

Canada. The majority of students reported a program of study in the Faculty of Arts (54.9%),

followed by Science (33.1%), Engineering (5.1%), Education (2.9%), Management (2.3%), and

Agricultural and Environmental Science (1.1%). Participants identified themselves as Caucasian

(54.3%), with others reporting Asian (20.57%), South Asian (8%), Hispanic (2.86%), and other

(14.3%). Approximately half the sample was in Year 0 of their undergraduate degree (a

prerequisite year) or in Year 1 (51.43%), while 24.0% were in Year 2, 17.7% were in Year 3, and

6.9% were in Year 4.

Sixty-eight participants (38.86%; 88.24% woman) reported engaging in NSSI at least

once in their lifetime, with the majority of participants (64.71%) reporting their first incidence of

NSSI occurring before the age of 15 years. Cutting was the most commonly reported method of

engagement in NSSI. Forty-five individuals (66.18%) reported having engaged in cutting as a

method of NSSI, followed by 60.29% reporting scratching, 52.94% reporting self-hitting,

33.82% reporting self-biting, 20.59% reporting burning, 19.12% reporting rubbing skin on rough

surfaces, and 11.76% reporting carving and sticking self with needles. The majority of the

sample (77.94%) reported engaging in multiple methods of NSSI.

Before conducting the statistical analyses pertaining to the research objectives (see

Results section), participants ($n = 2$) were excluded from the final sample because of

inconsistencies in their self-reported history of NSSI engagement. Furthermore, male participants

were also excluded ($n = 23$; $n = 8$ with a history of NSSI) from the final sample because they were underrepresented; therefore, gender could not be used to conduct group comparisons.

Measures

      Non-Suicidal Self-Injury Screener. In addition to demographic questions regarding age and gender, participants responded to "Have you ever engaged in self-injury without wanting to die (e.g., self-cutting, self-hitting, burning, bruising, scratching, etc.)", with either *Yes* or *No*. Participants that responded *Yes* to this item went on to complete the *Inventory of Statements about Self-Injury* (ISAS; Klonsky & Glenn, 2009), whereas individuals who responded *No* to this item skipped the ISAS.

      Non-Suicidal Self-Injury Characteristics. The Inventory of Statements about Self-Injury (ISAS; Klonsky & Glenn, 2009; Appendix A) was used to assess various aspects of NSSI. The measure contains two sections that cover the frequency and functions of NSSI. The present study used the first section of the ISAS to assesses the lifetime frequency of 12 different methods of NSSI (i.e., banging/hitting body parts, biting, burning, carving, cutting, interfering with wound healing, sticking self with needles, pinching, pulling hair, rubbing skin against rough surfaces, severe scratching, and swallowing dangerous chemicals) performed intentionally and without suicidal intent. Additionally, the ISAS also assesses descriptive features of NSSI including age of onset, and the experience of physical pain while self-injuring. The ISAS has demonstrated excellent internal consistency (Cronbach's $\alpha = .84$), concurrent validity and adequate test-retest reliability (Glenn & Klonsky, 2011; Klonsky & Glenn, 2009). In the present sample, the ISAS also demonstrated good reliability (Cronbach's $\alpha = .79$).

      Emotional Intelligence (EI). The twenty-item Short Profile of Emotional Competence (S-PEC; Mikolajczak, Brasseur, & Fantini-Hauwel, 2014; Appendix A) measure assessed five

core emotional competencies (identification, expression, comprehension, regulation, and utilization), separately for one's own emotions (intrapersonal EI) and the emotions of others (interpersonal EI). Items such as, "I am good at describing my feelings", are rated on a five-point scale ranging from (1) *Does not describe you at all,* to (5) *Describes you very well.* Although a longer version exists, the short version was preferred as it is sufficient for obtaining factor scores (interpersonal and intrapersonal EI) and a global EI score. The Profile of Emotional Competence (PEC; Brasseur et al., 2013) has demonstrated good internal consistency between the two subscales (Cronbach's α = .60 to .83) and global score (Cronbach's α > .88), as well as good concurrent validity, and convergent validity with other measures of EI (Brasseur et al., 2013). Findings from the S-PEC replicated the pattern of correlations observed with the full version, demonstrating adequate concurrent validity (Mikolajczak et al., 2014). In the present sample, both subscales demonstrated good reliability (Cronbach's α = .71 to .79).

Perceived Social Support. The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988; Appendix A) is a 12-item self-report questionnaire developed to assess the subjective assessment of social support adequacy from family, friends and significant others (Zimet et al., 1988). Each subscale consists of 4 items which provide a score on each of the subscales (family, friends, and significant others) or a global score. An item from the Family subscale includes, "My family really tries to help me", from the Friends subscale, "I can count on my friends when things go wrong", and from the Significant Others subscale, "There is a special person who is around when I am in need". Items are rated on a 7-point scale ranging from *very strongly disagree* (1) *to very strongly agree* (7). The MSPSS has demonstrated high internal consistency (Cronbach α = .88) and good test-retest reliability (Zimet, Powell, Farley, Werkman, & Berkoff, 1990; Zimet et al., 1988). Furthermore,

the scale has been found to have good construct validity as well as an association with measures of anxiety and symptoms of depression (Zimet et al., 1988). In the present sample, the measure demonstrated excellent reliability for the Significant Others (Cronbach's α = .93), Friends (Cronbach's α = .93), and Family (Cronbach's α = .89) subscales.

Social Connectedness. The Social Connectedness Scale Revised (SCS-R; Lee et al., 2001; Appendix A) is a 20-item self-report questionnaire used to assess emotional distance of the self from others, for both friends and society (Lee & Robbins, 1995), along with maintaining a sense of closeness (Lee & Robbins, 2000). Items such as *"*I feel like an outsider*"* and *"*I feel disconnected from the world around me*"* are rated on a 6-point scale ranging from *strongly disagree* (1) to *strongly agree* (6). The SCS-R has demonstrated excellent internal consistency (Cronbach's α = .92) as well as good convergent and discriminant validity (Lee et al., 2001). This measure demonstrated excellent reliability (Cronbach's α = .95) in the present sample.

Procedures

Participants from an existing database were emailed an invitation to participate in this study, as well as were recruited through social media postings and flyers around the university campus. Upon agreeing to participate, participants were sent an anonymized link to a battery of online confidential questionnaires that included demographic questions, the NSSI screener question, the ISAS, the S-PEC, the MSPSS, and the SCS-R, as well as the consent form. Only participants that reported a history of NSSI on the NSSI screener and met criteria for NSSI, based on their self-reported methods of engagement in NSSI, measured by the ISAS were included in the NSSI group. Individuals who reported no history of NSSI on the screener (and therefore did not complete the ISAS) were included in the comparison group. An exclusion criteria was applied to NSSI group membership, whereby participants that reported on the ISAS

solely engaging in hair pulling, pinching, interfering with wound healing, or the combination of any of these behaviours, as methods of NSSI, were excluded from further analyses ($n = 2$). Inclusion of these behaviours in previous studies examining NSSI has indicated a higher than expected prevalence rate of NSSI, as these behaviours tend to be more common in the general population (Nock, 2010). Participants were informed that the link to the online survey would expire after 7 days; subsequently, participants received debriefing information and list of resources. The data were exported from Qualtrics, and imported into a database, which required no data entry and no identifiable information was available through database access alone. All the procedures were approved by the university's institutional Research Ethics Board (REB).

CHAPTER 4

Results

Preliminary results

Prior to running the main analyses, the data were cleaned separately between two groups based on whether individuals reported a lifetime history of NSSI engagement or never having engaged in NSSI, according to their responses on the NSSI screener question and the ISAS. Results from a Missing Values Analysis determined that less than 5% of the data were missing values; therefore, the data were assumed to be missing completely at random (MCAR) and participants with missing values were removed from further analyses ($n = 8$). Two univariate outliers (+/- 3 *SD*s) were identified in the NSSI group and were reassigned less extreme values while retaining their relative standing in the distributions, following the recommendations of Tabachnick and Fidell (2001). This was done in order to preserve the sample size of the NSSI group. Two univariate outliers were identified in the comparison group and were excluded from further analyses. Furthermore, no violations of normality were identified. No multivariate outliers were identified by comparing the Mahalanobis Distance test values to a chi- square distribution, with the alpha level set to .001. Lastly, there was no multicollinearity between the variables, as Pearson correlation coefficients did not exceed .90 for any relations between the variables. Refer to Table 1 for the correlation coefficients.

Table 1

Pearson Correlation Coefficients for all Dependent Variables

	Intrapersonal EI	Interpersonal EI	Family support	Friend support	Significant other support	Social connectedness
Intrapersonal EI	-	.37*	.35*	.46*	.33*	.59*
Interpersonal EI		-	.13	.16	.15	.43*

Family support	-	.43*	.32*	.32*
Friend support		-	.54*	.61*
Significant other support			-	.37*
Social connectedness				-

Note. * = $p < .001$

The final sample consisted of 56 female participants with a self-reported lifetime history of NSSI engagement (M_{age} = 20.18 years, SD = 2.07), and a comparison group of 82 female participants with no history of NSSI (M_{age} = 20.22 years, SD = 1.97). All data were analyzed using SPSS version 25.

Emotional Intelligence

The first objective of the present study was to compare differences in intrapersonal and interpersonal EI between individuals with a history of NSSI and a comparison without a history of NSSI. It was hypothesized **(H1)** that individuals with a lifetime history of NSSI would report lower levels of both intrapersonal and interpersonal EI, than individuals with no history of NSSI. A one-way multivariate analysis of variance (MANOVA) was conducted to determine the effect of NSSI engagement on EI. Two subscales of EI were used to assess different aspects of EI: intrapersonal EI and interpersonal EI. The differences in EI between individuals with a history of NSSI and the comparison group on the combined dependent variables was statistically significant, $F(2, 135) = 16.59, p < .001$; Wilks' $\Lambda = .80$; partial $\eta^2 = .20$, which represents a medium effect. Follow-up univariate analysis of variances (ANOVAs) demonstrated that interpersonal EI did not statistically significantly differ between the groups ($F(1, 136) = 1.02, p$

$< .315$; partial $\eta^2 = .01$). Intrapersonal EI was significantly lower for individuals with a history of NSSI than the comparison group, $F(1, 136) = 22.08$, $p < .001$; partial $\eta^2 = .14$, representing a medium effect. Refer to Table 2 for the means and standard deviations of the EI subscales for each group.

Table 2

Descriptive Statistics for Emotional Intelligence Subscales by Group

	NSSI ($n = 56$)				Comparison ($n = 82$)			
	M	*SD*	*Skew*	*SE Skew*	*M*	*SD*	*Skew*	*SE Skew*
Intrapersonal EI	29.96	7.21	-.14	.32	35.02	5.43	-.32	.27
Interpersonal EI	36.71	6.11	-.82	.32	35.77	4.89	-.38	.27

Perceived Social Support and Connectedness

The second objective was to compare differences in perceived social support from various sources (i.e., family, friends, significant others) between individuals with a lifetime history of NSSI and the comparison group with no history of NSSI. It was hypothesized that individuals with a lifetime history of NSSI would report lower levels of perceived social support from family **(H2a)**, friends **(H2b)**, and significant others **(H2c)** than individuals without a history of NSSI. It was also hypothesized **(H3)** that individuals with a lifetime history of NSSI would report lower levels of social connectedness than individuals without a history of NSSI. To examine hypotheses **H2a**, **H2b**, and **H2c**, a one-way MANOVA was conducted to determine the effect of NSSI engagement on perceived social support from various sources. Three subscales of perceived social support were used to assess individuals' own perception of social support from

family, friends, and significant others. The differences in perceived social support between

individuals with a history of NSSI and the comparison group on the combined dependent

variables was statistically significant, ($F(3, 134) = 4.94$, $p = .003$; Wilks' $\Lambda = .90$; partial $\eta^2 =$

.10), representing a medium effect. Follow-up univariate ANOVAs demonstrated that perceived

social support from family ($F(1, 136) = 9.22$, $p < .003$; partial $\eta^2 = .06$, representing a small

effect), and friends ($F(1, 136) = 8.11$, $p = .005$; partial $\eta^2 = .06$, a small effect) were significantly

lower for individuals with a history of NSSI than the comparison group, while social support

from significant others ($F(1, 136) = .21$, $p = .646$; partial $\eta^2 = .002$) did not significantly differ

between the groups. To examine hypothesis **H3,** a one-way ANOVA was conducted to

determine group differences between individuals with a history of NSSI and the comparison

group on social connectedness. Results revealed that social connectedness was statistically

significantly lower for individuals with a history of NSSI than the comparison group, $F(1, 136) =$

22.90, $p < .001$; partial $\eta^2 = .14$, which represents a medium effect. Refer to Table 3 for the

means and standard deviations for perceived social support from the various sources, and social

connectedness, for each group.

Table 3

Descriptive Statistics of Perceived Social Support Subscales and Social Connectedness by Group

		NSSI ($n = 56$)				Comparison ($n = 82$)			
		M	*SD*	*Skew*	*SE Skew*	*M*	*SD*	*Skew*	*SE SKew*
Perceived Social Support									
	Family	4.76	1.53	-.08	.32	5.48	1.26	-.78	.27
	Friends	5.35	1.46	-.87	.32	5.95	.99	-.99	.27

Significant others	5.73	1.37	-1.07	.32	5.83	1.27	-1.15	.27
Social connectedness	72.02	19.7	-.40	.32	86.26	15.21	-.37	.27

Social connectedness as a potential mediator

The third objective was to investigate the role of social connectedness on the relationship between various sources of perceived social support (i.e., family, friends, significant others) and NSSI status. It was hypothesized that social connectedness would mediate the relation between the perception of social support from family (H4a), friends (H4b), and significant others (H4c), and NSSI status. To examine hypotheses **H4a, H4b, and H4c,** three separate mediation analyses were conducted by using PROCESS for SPSS by IBM, by following the recommendations of Hayes (2013).

As shown in Figure 1a for hypothesis **H4a**, the results suggest that higher perceived social support from family was associated with higher social connectedness (path *a*: $\beta = 4.18$, 95% CI [2.08, 6.29]). Reports of lower social connectedness were associated with an increased likelihood of NSSI group membership (path *b*: $OR = -.04$, 95% CI [-.06, -.02]). When controlling for social connectedness, the direct effect of perceived social support from family on NSSI group membership (path c': $OR = -.24$, 95% CI [-.52, .03]), was non-significant. An analysis of the mediating role of social connectedness within this model revealed a negative indirect effect ($OR = -.17$, Boot CI [-.34, -.06]), suggesting a full mediation, and supporting the hypothesis **(H4a)** that social connectedness mediates the relation between perceived social support from family and NSSI group membership. Given that the outcome variable is dichotomous (logistic analysis), a total effect was not directly computed (Kenny, 2016).

(a)

Social connectedness

a: *β* = 4.18*

b: *OR* = -0.04*

Family support

Direct effect (c'): *OR* = -.24

NSSI

Indirect effect (*ab*): *OR* = -.17*

(b)

Social connectedness

a: *β* = 9.08*

b: *OR* = -0.05*

Friend support

Direct effect (c'): *OR* = -.02

NSSI

Indirect effect (*ab*): *OR* = -.41*

(c)

Social connectedness

a: *β* = 5.17*

b: *OR* = -0.05*

Significant other support

Direct effect (c'): *OR* = .21

NSSI

Indirect effect (*ab*): *OR* = -.27*

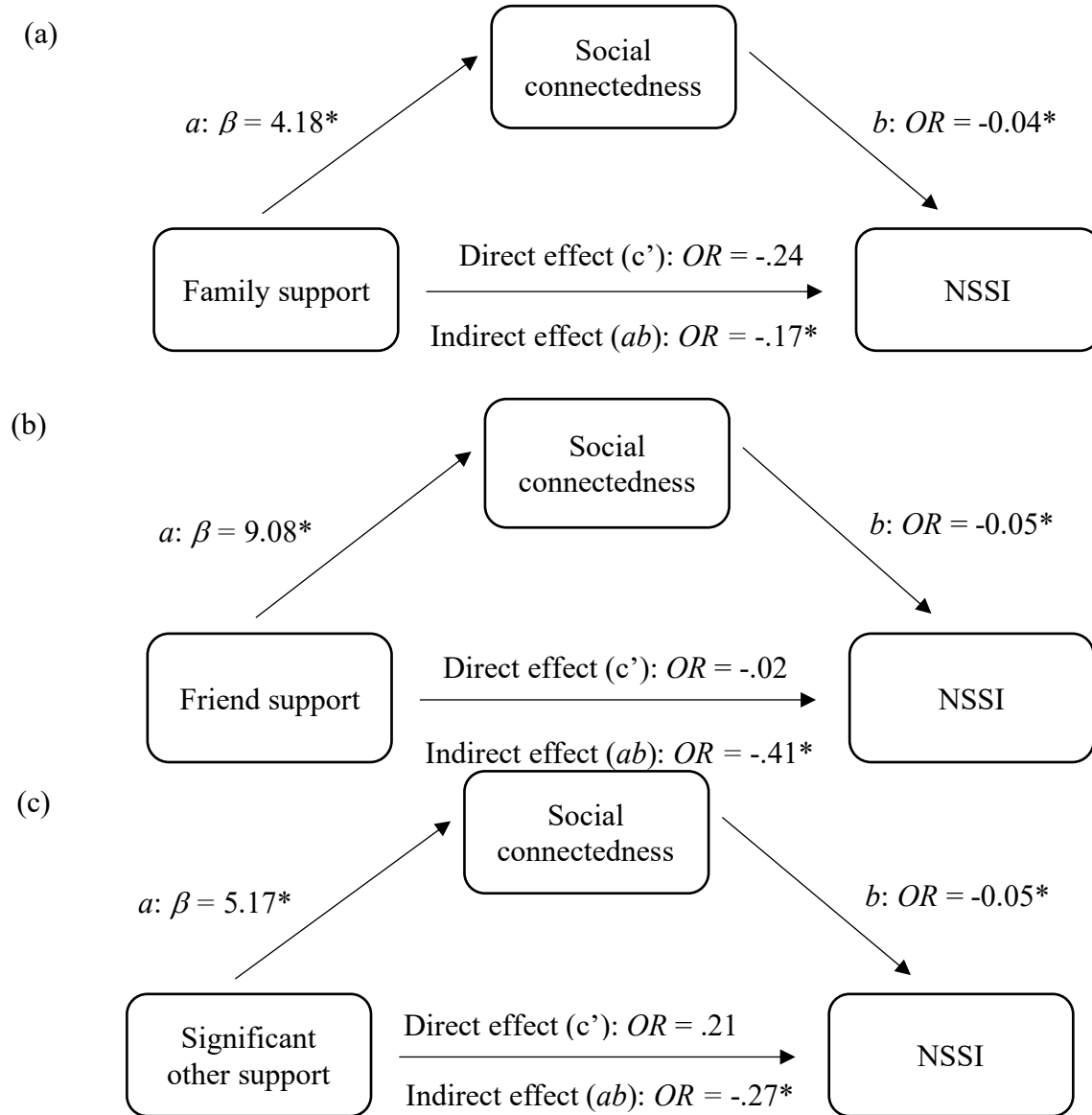*Figure 1.* (a, b, c) Models depicting the association of perceived social support from (a) family, (b) friends, (c) significant others, NSSI status and the mediating role of social connectedness. * = $p <$ .001

      As demonstrated in Figure 1b for hypothesis **H4b,** the results suggest that perceived social support from friends was associated with higher social connectedness (path *a*: *β* = 9.08,

95% CI [7.05, 11.11]). Reports of lower social connectedness were associated with an increased

likelihood of NSSI group membership (path *b*: *OR* = -.05, 95% CI [-.07, -.02]). When controlling

for social connectedness, the direct effect of perceived social support from family on NSSI group

membership (path c': *OR* = -.02, 95% CI -.39, .34]), was non-significant. An analysis of the

mediating role of social connectedness within this model revealed a negative indirect effect (*OR*

= -.41, Boot CI [-.74, -.18]), suggesting a full mediation, and supporting the hypothesis **(H4b)**

that social connectedness mediates the relation between perceived social support from friends

and NSSI group membership. A total effect was not directly computed.

Lastly, as demonstrated in Figure 1c, the results suggest that perceived social support

from significant others was associated with higher social connectedness (path *a*: β = 5.17, 95%

CI [2.94, 7.41]). Reports of lower social connectedness were associated with an increased

likelihood of NSSI group membership (path *b*: *OR* = -.05, 95% CI [-.077, -.03]). When

controlling for social connectedness, the direct effect of perceived social support from significant

others on NSSI group membership (path c': *OR* = .21, 95% CI [-.10, .52]), was non-significant.

An analysis of the mediating role of social connectedness within this model revealed a negative

indirect effect (*OR* = -.27, Boot CI [-.48, -.13]), suggesting a full mediation, and supporting the

hypothesis **(H4c)** that social connectedness mediates the relation between perceived social

support from significant others and NSSI group membership. A total effect was not directly

computed.

CHAPTER 5

Discussion

This study represents a contribution to the current literature on NSSI engagement in young adulthood by furthering our understanding of the interpersonal factors surrounding this behaviour. Specifically, it demonstrates that while university students who report a history of NSSI also report difficulties with emotional competencies as they pertain to their own emotions, they do not report challenges with competencies pertaining to the emotions of others. Additionally, results suggested that individuals with a history of NSSI perceive their social support to be lower than do their non-self-injuring peers, and that the relation between perceived social support and NSSI status is explained by one's level of connectedness to one's social environment. Therefore, the research goals were to a) investigate the differences in intrapersonal and interpersonal EI between individuals who reported a history of NSSI engagement and a comparison group; b) examine the possible differences in perceived social support from various sources (i.e., family, friends, significant others), and social connectedness, between the groups; and, c) examine whether social connectedness may be a potential mediator in the relation between perceived social support from the various sources and NSSI status.

Emotional Intelligence

It was expected that university students with a history of NSSI would report lower levels of both intrapersonal and interpersonal EI, than a comparison group of individuals with no history of NSSI. This hypothesis was partially supported, as results from the MANOVA demonstrated that students with a history of NSSI reported lower intrapersonal EI than the comparison group but interestingly, did not score any differently in interpersonal EI. The results regarding intrapersonal EI are consistent with a body of research that has documented that

individuals who engage in NSSI experience difficulties in emotion regulation, whereby NSSI is often reported as a means of affect-regulation (Klonsky, 2007; Klonsky, 2009). Additionally, emotion regulation has been documented as an important element associated with NSSI cessation (for a review see Mumme, Mildred, & Knight, 2017). These findings add to the emotion regulation literature by providing additional evidence that university students who report a history of NSSI more comprehensively experience difficulties in identification, comprehension, expression, regulation and use of emotions than those who do not report a history of NSSI. However, the results also provide evidence that students with a history of NSSI do not necessarily report experiencing difficulties in these emotional competencies as they pertain to the emotions of other individuals. These findings challenge early EI theory, which suggested that the better one is at using intrapersonal emotional competencies, the better one will be at navigating interpersonal emotional competencies (Mikolajczak et al., 2014). This inconsistency may be demonstrating unique characteristics about individuals with a history of NSSI, whereby they are particularly sensitive and understanding of others' emotions, despite having difficulties with their own affect regulation. This also corroborates other theoretical frameworks surrounding EI (e.g., Brasseur & Gregoire, 2010), which suggest that the development of intrapersonal and interpersonal EI may be asymmetrical.

Perceived Social Support and Connectedness

The second objective was to investigate the possible differences in perceived social support and connectedness between university students with a history of NSSI compared to students with no history of NSSI. As expected, results from the MANOVA examining group differences on perceived social support indicated that individuals with a history of NSSI perceived their social support to be lower than the comparison group. Specifically, university

students with a history of NSSI, perceived their social support from family and friends, to be

lower than students with no history of NSSI. However, inconsistent with these findings,

individuals with a history of NSSI, did not report perceiving their social support from significant

others differently than did individuals without a history of NSSI. While Trepal and colleagues

(2015) found similar results, when comparing perceived social support from significant others

between individuals with a past history of NSSI and individuals who never engaged in this

behaviour, they did find it to be lower for individuals currently engaging in NSSI relative to

individuals with a past history of NSSI. In the current study, the recency of NSSI engagement

was not asked, thus, it was not possible to determine whether engagement was current or in the

past. This is a clear limitation of the present study as noted below, and may be contributing to

the lack of significant findings for perceived social support from significant others. Future

studies are needed to differentiate between individuals currently engaging in NSSI and those

with a past history. Doing so may have supported previous results, that demonstrated an

association between social support from significant others and NSSI cessation. Overall, the

results suggest that perceived difficulties with social support from family and friends may be of

unique importance for individuals with a history of NSSI.

An additional difference found between university students who reported a history of

NSSI and students who did not report a history of NSSI was in how connected they reported

feeling to their social environment. Consistent with the hypothesis, the ANOVA revealed that

students who reported a history of NSSI reported lower levels of social connectedness than did

students without a history of NSSI. These findings are in line with previous results

demonstrating that individuals who reported engaging in self-injury also reported lower levels of

social connectedness than those with no history of the behaviour (Rotolone & Martin, 2012). To

examine more closely the role of social connectedness in NSSI engagement, the third objective

investigated the potential mediating role of social connectedness in the relation between

perceived social support and NSSI status. In line with the hypotheses, an indirect effect of

perceived social support from each of the supportive sources investigated (i.e., family, friends,

significant others) on NSSI status through social connectedness was confirmed. The findings

suggest that the relation between perceived social support and NSSI status is fully mediated by

the degree to which university students report feeling connected to others. That is, individuals'

perceived social support was only associated with NSSI engagement, through their reported level

of social connectedness. These results are in line with Whitlock, Prussien, and Pietrusza (2015)'s

qualitative analysis of the psychosocial factors associated with NSSI cessation amongst

university students. Findings demonstrated that it was not the mere presence of having

supportive sources that predicted NSSI cessation, but rather it was individuals' ability to make

and perceive positive connections with others that was most strongly associated with NSSI

cessation (Whitlock, Prussien, & Pietrusza, 2015).

Taken together, the findings of the present study provide evidence that while university

students with a history of NSSI report difficulties in intrapersonal emotional functioning, they do

not necessarily report interpersonal emotion-related difficulties. Furthermore, examining various

qualities of interpersonal relationships yielded findings suggesting that despite a decrease in

perceived social support from family and friends among individuals with a history of NSSI, the

relation between university students' perception of their social support and their engagement in

NSSI, is explained by how connected they feel to their social environment.

Limitations and Future directions

While the present study provides new insights to the NSSI literature, there are limitations that need to be addressed. The sample of the current study was homogeneous, which limits the generalizability of the present findings. Specifically, the final sample consisted only of females. While efforts were made to recruit male participants, they continued to be under represented in the present study. This is a consistent issue in NSSI research, whereby many studies do not include enough males to yield meaningful gender effects (for a review see Cipriano et al., 2017). Because of this, gender differences in NSSI are less understood. Considering that previous studies that have been able to examine gender differences have found that males differ from females in terms of various NSSI characteristics (e.g., Andover et al., 2010), it is important that future studies continue to try to include both males and females in order to better understand the link between these factors across genders. A second limitation pertaining to the homogeneity of the sample was ethnicity. The sample used in the present study identified as predominantly Caucasian. This is also a consistent issue in NSSI research, in which samples included in studies are majority Caucasian (Gholamrezaei, De Stefano, & Heath, 2017), limiting the generalizability of the findings and making it more difficult to understand NSSI engagement across ethnicities or cross-culturally.

Another limitation of the present study was its cross-sectional design, which does not allow for inferences of causality nor directionality. Additionally, NSSI engagement was not examined developmentally, but rather examined during one developmental stage. As adolescence may be a vulnerable developmental time period, particularly around the transition from high school to university, it would be important that future studies examine NSSI behaviours across developmental stages, longitudinally. Future studies should also seek to examine the mediation model used in the present study, longitudinally. This would make it possible to investigate

whether social connectedness is the mechanism through which perceived social support is predictive of NSSI engagement, or vice versa.

Finally, the present study did not examine differences between individuals who were currently engaging in NSSI compared to those who stopped engaging in the behaviour (i.e., have a past history of NSSI) due to a lack of power, which negated this possibility. Longitudinal research is needed to understand the direction of the relations between the social factors and NSSI. Examining the directionality of these relations would allow for interpretations regarding NSSI onset, maintenance and cessation. Along similar lines, due to the cross-sectional design of the present study, it is unclear whether university students engage in unhealthy coping behaviours such as NSSI due to a lack of social support or perhaps that students adopting NSSI behaviours to cope, consequently, feel less connected to their social support. These are important questions that future studies may want to further investigate.

Implications

The results of the present study add to the current literature on the interpersonal factors surrounding engagement in NSSI by furthering our understanding of the specific emotion-related difficulties that may be associated with NSSI engagement. In addition, the present study provided evidence that university students' sense of connectedness to their social environment may be an important construct to consider when examining social support. Overall, the findings point to the importance of considering different sources of social support in clinical settings. Specifically, they highlight the importance of investigating beyond individuals' perceptions of social support to also incorporate their sense of connectedness to these sources of social support. This also has the potential to lead to NSSI cessation, as documented in a study by Kool, van Meijel, and Bosman (2009), whereby individuals engaging in self-injury reported that by

learning alternative emotion regulation strategies, self-injury cessation was possible. Respondents revealed that among these new strategies learnt, establishing a connection with others was an important element that enabled them to stop engaging in self-injury (Kool, van Meijel, & Bosman, 2009). The findings of the present study support those of earlier work, demonstrating the usefulness of embedding strategies to strengthen and form connections with others, in therapeutic approaches geared towards NSSI.

Conclusion

This study represents an original contribution to the NSSI literature by providing additional evidence of social factors associated with NSSI engagement. Specifically, individuals who report a history of engaging in NSSI also reported lower intrapersonal EI than their non-self-injuring peers; however, they did not report difficulties in emotional competencies as they pertain to the emotions of others. Additionally, this study extends the current literature regarding the relation of perceived social support and NSSI status. While university students with a history of self-injury perceive their social support from family and friends to be lower than a comparison group, it was their level of social connectedness that explained the relation between their perceived social support and NSSI status. Therefore, this study also adds to the current literature by demonstrating the unique importance of social connectedness for young adults who report a history of NSSI. Furthermore, this program of research contributes to the study of Human Development by taking preliminary steps to understanding how various interpersonal factors may be associated with NSSI engagement during young adulthood, a critical developmental period for the majority of university students. Finally, more developmental research is needed to further explore the direction of these relations in order understand their impact on NSSI onset, maintenance and cessation.

CHAPTER 6

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Appendix A:

Online Questionnaires

Demographic Questions

1-Age: ……………………………
2- Ethnicity (e.g., Caucasian, South Asian, etc.):………………………………………………………………
3-What is/are your current faculty(s): Arts - Science -   Management -   Engineering   -   Agricultural and Environmental Science   -   Education - Schulich School of Music   –   Other (please specify): ……………………………………………
4- Please identify your major and minor (if applicable): **a) Major:**…………………………..**b) Second Major (if applicable):**……………………………… **c) Minor:**…………………………..**d) Second Minor (if applicable):**………………………………
5- Year of study (circle one): U0 (prerequisites)   U1   U2   U3   U4   MSc/MA   PhD
6- Is this your first year studying in a university?   No   Yes
7- Is this your final year of university before graduating from your current degree? No   Yes
8- Did you attend CEGEP?   No   Yes   N/A
9- What gender identity do you currently most identify with?   Man   Woman Gender Queer/Non-Conforming   Self-Identify **If not listed please specify:**……………………………

Inventory of Statements About Self-Injury (ISAS)

INVENTORY OF STATEMENTS ABOUT SELF-INJURY (ISAS) – SECTION I. BEHAVIORS

This questionnaire asks about a variety of self-harm behaviors. Please only endorse a behavior if you have done it <u>intentionally</u> (i.e., on purpose) and <u>without suicidal intent</u> (i.e., not for suicidal reasons).

1. **Please estimate the number of times in your life you have intentionally (i.e., on purpose) performed each type of non-suicidal self-harm (e.g., 0, 10, 100, 500):**

Cutting	____	Severe Scratching	____
Biting	____	Banging or Hitting Self	____
Burning	____	Interfering w/ Wound Healing (e.g., picking scabs)	____
Carving	____	Rubbing Skin Against Rough Surface	____
Pinching	____	Sticking Self w/ Needles	____
Pulling Hair	____	Swallowing Dangerous Substances	____

Other _____, ____

2. If you feel that you have a *main* form of self-harm, please circle the behavior(s) on the first page above that you consider to be your main form of self-harm.

3. At what age did you:

First harm yourself? _____   Most recently harm yourself? _____
                                             (approximate date – month/date/year)

4. Do you experience physical pain during self-harm?

Please circle a choice: YES   SOMETIMES   NO

5. When you self-harm, are you alone?

Please circle a choice: YES   SOMETIMES   NO

6. Typically, how much time elapses from the time you have the urge to self-harm until you act on the urge?

Please circle a choice:

< 1 hour   1 - 3 hours   3 - 6 hours

6 - 12 hours   12 - 24 hours   > 1 day

7. Do/did you want to stop self-harming?

Please circle a choice: YES   NO

Short Profile of Emotional Competence (S-PEC) scale

The questions below are designed to provide a better understanding of how you deal with your emotions in daily life. Please answer each question spontaneously, taking into account the way you would normally respond. There are no right or wrong answers as we are all different on this level.

For each question, you will have to give a score on a scale from 1 to 5, with 1 meaning that the statement does not describe you at all or you never respond like this, and 5 meaning that the statement describes you very well or that you experience this particular response very often.

	1	2	3	4	5
1. I don't always understand why I respond in the way I do.					
2. When I feel good, I can easily tell whether it is due to being proud of myself, happy or relaxed.					
3. I am good at describing my feelings.					
4. I never base my personal life choices on my emotions.					
5. When I am feeling low, I easily make a link between my feelings and a situation that affected me.					
6. I can easily get what I want from others.					
7. Most of the time I understand why people feel the way they do.					
8. When I am touched by something, I immediately know what I feel.					
9. I do not understand why the people around me respond the way they do.					
10. When I see someone who is stressed or anxious, I can easily calm them down.					
11. Other people tend to confide in me about personal issues.					
12. My emotions inform me about changes I should make in my life.					
13. I find it difficult to explain my feelings to others even if I want to.					
14. If someone came to me in tears, I would not know what to do.					
15. I find it difficult to listen to people who are complaining.					
16. I am good at sensing what others are feeling.					
17. If I wanted, I could easily make someone feel uneasy.					
18. I find it difficult to handle my emotions.					
19. When I am angry, I find it easy to calm myself down.					
20. Quite often I am not aware of people's emotional state.					

The Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**
Circle the "2" if you **Strongly Disagree**
Circle the "3" if you **Mildly Disagree**
Circle the "4" if you are **Neutral**
Circle the "5" if you **Mildly Agree**
Circle the "6" if you **Strongly Agree**
Circle the "7" if you **Very Strongly Agree**

1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7	SO
2.	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	SO
3.	My family really tries to help me.	1	2	3	4	5	6	7	Fam
4.	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	Fam
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	SO
6.	My friends really try to help me.	1	2	3	4	5	6	7	Fri
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7	Fri
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7	Fam
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	Fri
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7	SO
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7	Fam
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7	Fri

Social Connectedness Scale-Revised

Directions: Following are a number of statements that reflect various ways in which we view ourselves. Rate the degree to which you agree or disagree with each statement using the following scale (1 = Strongly Disagree and 6 = Strongly Agree). There is no right or wrong answer. Do not spend too much time with any one statement and do not leave any unanswered.

Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Strongly Agree
1	2	3	4	5	6

	Strongly Disagree					Strongly Agree
1. I feel comfortable in the presence of strangers……..	1	2	3	4	5	6
2. I am in tune with the world………………………….	1	2	3	4	5	6
3. * Even among my friends, there is no sense of brother/sisterhood………………………………………	1	2	3	4	5	6
4. I fit in well in new situations……………………….	1	2	3	4	5	6
5. I feel close to people……………………………….	1	2	3	4	5	6
6. I feel disconnected from the world around me……..	1	2	3	4	5	6
7. Even around people I know, I don't feel that I really belong. ………………………………………………	1	2	3	4	5	6
8. I see people as friendly and approachable………….	1	2	3	4	5	6
9. I feel like an outsider………………………………..	1	2	3	4	5	6
10. I feel understood by the people I know…………….	1	2	3	4	5	6
11. I feel distant from people…………………………..	1	2	3	4	5	6
12. I am able to relate to my peers…………………….	1	2	3	4	5	6
13. I have little sense of togetherness with my peers…..	1	2	3	4	5	6
14. I find myself actively involved in people's lives…...	1	2	3	4	5	6
15. I catch myself losing a sense of connectedness with society…………………………………………	1	2	3	4	5	6
16. I am able to connect with other people…………….	1	2	3	4	5	6
17. I see myself as a loner……………………………..	1	2	3	4	5	6
18. I don't feel related to most people………………….	1	2	3	4	5	6
19. My friends feel like family………………………….	1	2	3	4	5	6
20. I don't feel I participate with anyone or any group…	1	2	3	4	5	6

Appendix B:

Consent Form for Individuals who reported a History of NSSI

![McGill](McGill logo)

CONSENT FORM

This is to invite you to participate in a two-part study entitled *Coping, emotional understanding, and regulatory behaviours*, conducted by Dr. Nancy Heath's research team at McGill University. Findings obtained from the uCope study you participated in the fall semester revealed that students engage in a variety of healthy and less healthy coping strategies across their lifetime (e.g., meditation, talking to friends, food restriction, frequent alcohol use, and non-suicidal self-injury).

Consistent with some of our previous studies and those of our colleagues at other universities, we found that about 10% of university students reported hurting themselves on purpose without suicidal intent (e.g., non-suicidal self-injury). Therefore, as one of the follow-up projects from uCope, we are following up with students who have reported a lifetime history of non-suicidal self-injury engagement such as yourself and we will also be following-up with students who have reported a variety of other healthy and less healthy coping behaviors.

Purpose

Specifically, the purpose of this two-part study is to further explore protective factors and emotion regulation strategies associated with a variety of coping strategies. With regards self-injury, we know that individuals who engage in self-injury often do so in order to manage intense negative emotions, however the present study is interested in investigating possible interpersonal and intrapersonal protective factors and strategies that might help to regulate emotions and thus help in managing self-injury. Much previous research has primarily focused on risk factors and negative correlates of self-injury engagement, however, we would like to approach it with a more positive framework. Specifically, we are examining various protective factors such as social support, emotional awareness or understanding and emotion regulation, stress, connectedness, and life events as well as determining the effectiveness of a brief emotion regulation coping strategy to manage stress.

Project Activities

The first part of the study that you are about to participate in consists of an online survey that should take approximately 30 minutes to complete. This survey will include a brief demographic section, some questions regarding your history with self-injury, as well as questions relating to the various protective factors listed above as well as asking for what you think future interventions should include.

The second part of the study that you are scheduled to participate in will be conducted in one of our project rooms in the education building and will involve completing a cognitive task as well as a brief activity that has been shown to improve emotion regulation and filling out some measures related to the activity. This part of the study should take approximately 30 minutes to complete. Through your participation, we aim to better understand the underlying protective factors for self-injury.

Confidentiality

    No individual responses or identifying information will be used in any written or oral presentation of the results. Note that your participation will remain confidential, and that all completed questionnaires will be kept secure and only accessible to Dr. Nancy Heath and graduate students under her supervision. All data will be coded to ensure confidentiality. Please note that the project is structured so that the research assistant who will be meeting with you for the in-person portion will not know which coping behaviours you endorsed, this information will remain confidential.

Participation

    Your participation in this research is completely voluntary. You do not have to answer any questions that you do not wish to answer and are free to withdraw from the study at any time, without prejudice.

Potential Risks

    While there are no anticipated risks involved in participation in this research project, you might be sensitive to, or uncomfortable with, some of the questions, a list of mental health resources online and in the Montreal-area will be provided at the end of each part of the study.

Compensation

    Lastly, we are offering you 25$ upon participating in part 2 (the in-person project task and the emotion regulation activity) of the study. Should you choose not to complete part 2 of the study in its entirety, you will be compensated for the time you spend taking part in the in-person project tasks and activities. In the event you withdraw, you will be compensated a pro-rated amount with a 1$/min estimated compensation for part 2, up to the max of $25 for the completion of part 2. Please note that part 1 must be completed prior to the in-person session.

Questions

    If you have any questions regarding this project, please contact Amanda Argento at (514) 398-1232 and amanda.argento@mail.mcgill.ca or Amanda Simundic at (514) 398-1232 and amanda.simundic@mail.mcgill.ca or our supervisor Dr. Nancy Heath at (514) 398-3439 and nancy.heath@mcgill.ca.

    If you have any ethical concerns or complaints about your participation in this study, and want to speak with someone not on the research team, please contact the McGill Ethics Manager at 514-398-6831 or lynda.mcneil@mcgill.ca.

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Appendix C:

Consent Form for Individuals who did not report a history of NSSI

![McGill]

CONSENT FORM

This is to invite you to participate in a two-part study entitled *Coping, emotional understanding, and regulatory behaviours*, conducted by Dr. Nancy Heath's DAIR research team at McGill University. Findings obtained from the uCope study you participated in the fall semester revealed that students engage in a variety of healthy and less healthy coping strategies across their lifetime (e.g., meditation, talking to friends, food restriction, frequent alcohol use, and non-suicidal self-injury). As one of the follow-up projects from uCope, we are following up with students who have reported a variety of coping behaviours; healthy and less healthy ones.

Purpose

Specifically, the purpose of this two-part study is to further explore protective factors and emotion regulation strategies associated with a variety of coping strategies. The present study is interested in investigating possible interpersonal and intrapersonal protective factors and strategies that might help to regulate emotions. We would like to approach the study of various coping behaviours with a more positive framework; specifically, we are examining various protective factors such as social support, emotional awareness, understanding and regulation, stress, connectedness, and life events as well as determine the effectiveness of a brief emotion regulation coping strategy.

Project Activities

The first part of the study that you are about to complete consists of a series of questionnaires which should take approximately 30 minutes to complete. These questionnaires will include a brief demographics section as well as questions relating to the various protective factors listed above.

The second part of the study that you are scheduled to complete and will be conducted in one of our project rooms or in a reserved room in the education building will involve completing a cognitive task as well as a brief activity that has been shown to improve emotion regulation. This part of the study should also take approximately 30 minutes to complete. Through your participation, we aim to better understand the underlying protective factors of unhealthy coping behaviours as well as receive your input on the development of future interventions.

Confidentiality

No individual responses or identifying information will be used in any written or oral presentation of the results. Note that your participation will remain confidential, and that all completed questionnaires will be kept secure and only accessible to Dr. Nancy Heath and graduate students under her supervision. All data will be coded to ensure confidentiality.

Participation

Your participation in this research is completely voluntary. You do not have to answer any questions that you do not wish to answer and are free to withdraw from the study at any time, without prejudice.

Potential Risks

While there are no anticipated risks involved in participation in this research project, you might be sensitive to, or uncomfortable with, some of the questions, a list of mental health resources online and in the Montreal-area will be provided at the end of each part of the study.

Compensation

Lastly, we are offering you 25$ upon participating in part 2 (the in-person project task and the emotion regulation activity) of the study. Should you choose not to complete part 2 of the study in its entirety, you will be compensated for the time you spend taking part in the in-person project tasks and activities. In the event you withdraw, you will be compensated a pro-rated amount with a 1$/min estimated compensation for part 2, up to the max of $25 for the completion of part 2. Please note that part 1 must be completed prior to the in-person session.

Questions

If you have any questions regarding this project, please contact Amanda Argento at (514) 398-1232 and amanda.argento@mail.mcgill.ca or Amanda Simundic at (514) 398-1232 and amanda.simundic@mail.mcgill.ca or our supervisor Dr. Nancy Heath at (514) 398-3439 and nancy.heath@mcgill.ca.

If you have any ethical concerns or complaints about your participation in this study, and want to speak with someone not on the research team, please contact the McGill Ethics Manager at 514-398-6831 or lynda.mcneil@mcgill.ca.

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